Claims 3 and 4 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection.

The specific basis for this rejection is the limitation in Claim 3 with respect to hydrolyzable chlorine content. It is stated in the Office Action that the disclosure within Example 1 and the comparative examples that the chlorine content was not below 0.1% cannot provide support for the content of compositions of the instant invention.

Applicants maintain that support for the hydrolyzable chlorine content limitation is found throughout their specification. The results reported in Example 1 corroborate Applicants' contention that the process of the present invention produces ether isocyanates with hydrolyzable chlorine contents of less than 0.1%. The results reported in the comparative examples demonstrate that known phosgenation methods outside the scope of the claimed invention do not achieve the less than 0.1% hydrolyzable chlorine levels of the claimed invention.

The discussion of the prior art at page 1, lines 28-29 of the specification makes it quite clear that a residual hydrolyzable chlorine content of 0.1% is considered very high by those skilled in the art. The specification also teaches at page 1, lines 29-30 that these high hydrolyzable chlorine contents make it difficult to use the polyisocyanate. At page 1, line 29 through page 2, line 1 of Applicants' specification, it is taught that isocyanates having high hydrolyzable chlorine contents are not useful for preparing non-discoloring raw materials for coatings.

One of the stated objects of Applicants' invention is "to provide a process for the production of high quality isocyanates containing ether groups." (See page 3, lines 17-18 of the specification.) It is also stated at page 3, lines 22-25 of the specification that this object is achieved by the process of the present invention. Applicants' Examples and comparative examples support these statements.

One skilled in the art reading Applicants' specification would therefore readily appreciate that the claimed process produces isocyanates which do not have the

high hydrolyzable chlorine contents that make it difficult to use the isocyanate (i.e., hydrolyzable chlorine contents of 0.1% or greater).

It is well established that an adequate description under 35 U.S.C. §112, first paragraph does not require literal support for the claimed invention. It is sufficient if the originally-filed disclosure would have conveyed to one having ordinary skill in the art that an applicant had possession of the concept of what is claimed. Ex parte Parks, 30 USPQ2d 1234 (BPAI 1994).

Applicants submit that it would be clear to one of ordinary skill in the art reading the above-referenced teachings in their specification that Applicants had possession of the invention which is presently claimed in Claims 3 and 4 (including the property of having a hydrolyzable chlorine content of less than 0.1%) at the time their application was filed.

Applicants therefore maintain that the subject matter of Claims 3 and 4 is adequately described in the specification to satisfy the requirements of 35 U.S.C. § 112, first paragraph.

Withdrawal of this rejection is therefore requested.

Claims 1 and 2 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lehmann et al (U.S. Patent 3,267,122) in view of Joulak et al (U.S. Patent 5,391,683) or Biskup et al (U.S. Patent 5,449,818) or Bischof et al (U.S. Patent 5,516,935). Applicants continue to respectfully traverse this rejection.

Each of these references was discussed and distinguished over the claimed invention in Applicants' previous response. This discussion will not be repeated. Rather, Applicants will address the specific points raised by the Examiner in the Office Action dated August 28, 1997.

It was noted in the Office Action that Lehmann et al does not disclose a vapor phase phosgenation process of the type being claimed by Applicants at page 4, lines 4-5 of the Office Action.

Applicants would direct the Examiner's attention to two other teachings of the Lehmann et al disclosure which are pertinent to the issue of obviousness of the claimed invention. The first of these teachings is found at column 1, lines 16-18 where it is stated:

> It is also known that diamines which contain ether groups upon phosgenation yield mainly ether cleavage products.

The second of these pertinent teachings is found at column 2, lines 24-29 where it is stated:

> Again for best results and highest yield, it is preferred that **not too high a temperature** for the phosgenation be used. (emphasis added)

Temperatures of up to 170°C are reported in the Examples.

Applicants submit that one skilled in the art reading these two teachings of Lehmann et al would **not** consider it obvious to conduct the Lehmann et al phosgenation process in the vapor phase (i.e., at temperatures exceeding the 300°C minimum employed in the secondary references) as is maintained at page 4, lines 9-15 of the Office Action.

Applicants also maintain that even if one skilled in the art were to attempt to conduct the Lehmann et al process in the vapor phase, the above-quoted teachings would lead that skilled artisan to expect isocyanate yields lower than those achieved by Lehmann et al.

However, contrary to this expectation, Applicants' vapor phase phosgenation process produces ether isocyanates in yields ranging from 96.8% to 99.5% which are significantly higher than the 65% to 81% yields obtained by Lehmann et al in the disclosed process.

Therefore, even if one skilled in the art were to consider it obvious to try to conduct the Lehmann et al process in the vapor phase as is taught by the secondary references, that skilled artisan could not possibly have expected to achieve the significantly higher yields achieved by Applicants' claimed process.

Applicants' invention as claimed in Claims 1 and 2 is not therefore rendered obvious by the teachings of Lehmann et al in combination with the teachings of any or all of the secondary references.

At page 4, line 16 through page 5, line 2 of the Office Action, it is stated that Applicants' argument with respect to differences between the Lehmann et al diamines used as starting materials and the diamine starting materials of the

present invention is without merit because the instant claims encompass the diamines of Lehmann et al.

It is well established that the relevant portions of a reference include not only teachings that would suggest particular aspects of an invention to one having ordinary skill in the art, but also teachings that would lead away from the claimed invention. In re Mercier, 185 USPQ 774 (CCPA 1975).

Applicants submit that the argument made at page 4, line 16 through page 5, line 2 of the Office Action is inconsistent with the express teaching of Lehmann et al that selection of the specific amines required therein is responsible for the improved results reported therein. (at column 1, lines 55-57) The teaching of Lehmann et al with respect to the criticality of specific diamine starting materials to the reference process would therefore lead those skilled in the art away from Applicants' claimed invention.

At page 5, lines 7-16 of the Office Action, it is argued that the teaching of the secondary references that vapor phase phosgenation is more efficient and produces higher yields with a variety of different amines as compared with traditional phosgenation provides ample motivation to one of ordinary skill in the art for conducting the phosgenation of ether amines in the vapor phase.

Applicants submit that this argument is not consistent with the express teachings of the Lehmann et al reference with which the teachings of those secondary references are being combined. More specifically, the Patent Office argument is inconsistent with the teaching of Lehmann et al that methods for phosgenating amines known in the art were not effective for amines containing ether groups. The Patent Office argument is also inconsistent with the teaching of Lehmann et al that phosgenation at high temperatures will **not** produce the desired ether isocyanates in the highest yields.

The second argument made by the Patent Office in response to Applicants' arguments is **not** therefore supported by the **only** cited reference which is specifically directed to the phosgenation of ether diamines. Such unsupported argument can not provide a proper basis for a rejection under 35 U.S.C. § 103.

Withdrawal of this rejection is therefore requested.

In view of the above remarks, reconsideration and allowance of Claims 1-4 are respectfully requested.

Respectfully submitted,

FRANK RICHTER
JOSEF PEDAIN
KLAUS NACHTKAMP
ANDREAS FLINK

By _____
Lyndanne M. Whalen
Attorney for Applicants
Reg. No. 29,457

Bayer Corporation
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-2347
FACSIMILE PHONE NUMBER:
(412) 777-5449
/vjt/LMW2126